



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
**18.01.2017 Bulletin 2017/03**

(51) Int Cl.:  
**G07C 9/00 (2006.01) E05F 15/00 (2015.01)**

(21) Application number: **16179606.5**

(22) Date of filing: **15.07.2016**

(84) Designated Contracting States:  
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR**  
Designated Extension States:  
**BA ME**  
Designated Validation States:  
**MA MD**

(72) Inventors:  
• **BOSIO, Stefano**  
**25080 NUVOLENTA BS (IT)**  
• **BOSIO, Paolo**  
**25018 MONTICHIARI BS (IT)**

(74) Representative: **Modiano, Micaela Nadia et al**  
**Modiano & Partners**  
**Via Meravigli, 16**  
**20123 Milano (IT)**

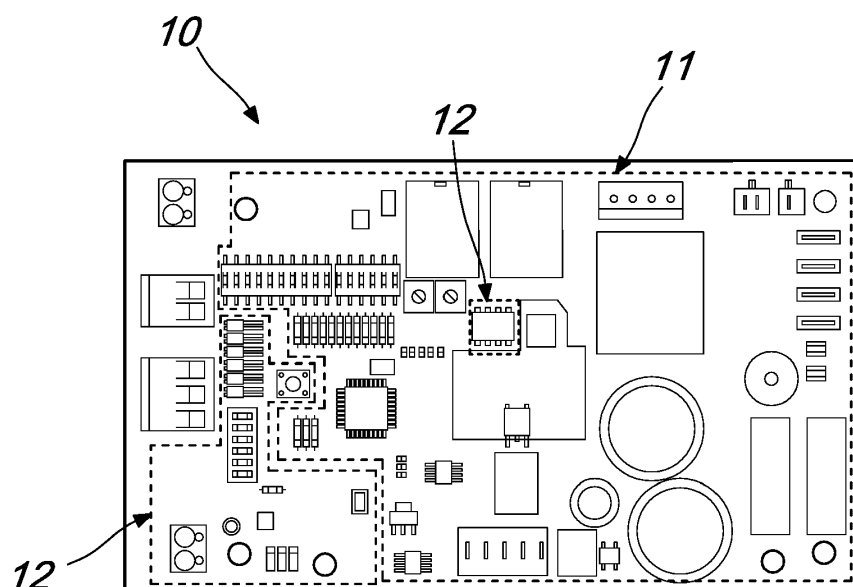
(30) Priority: **17.07.2015 IT UB20154750 U**

(71) Applicant: **R.I.B. S.R.L.**  
**25014 CASTENEDOLO (BS) (IT)**

(54) **CONTROL DEVICE FOR AUTOMATIC CLOSURE SYSTEMS**

(57) A control device for automatic closure systems which comprises a control unit for at least one device for actuating the closure system and a transceiver device that is functionally connected by way of remote control means to at least one accessory for command and/or for safety/protection and/or for indication of the automatic closure system; the control unit comprises an electronic

control board (10) which defines a first command and control portion (11) of the actuation device and a second command and control portion (12) of the transceiver device, the first command and control portion (11) and the second command and control portion (12) being electrically connected at least partially by way of connection tracks defined on the electronic control board (10).



*Fig. 2*

## Description

**[0001]** The present invention relates to a control device for automatic closure systems such as for example automatic gates, automatic barriers, tip-up doors or sectional doors and the like.

**[0002]** Traditionally, automatic closure systems have a usual control unit, which is designed to control the actuation or the movement motor and is connected, through a series of wires, to a plurality of control devices such as, for example, detection photocells, selectors for manual opening, flashing lights etc..

**[0003]** The necessity to connect all the accessories to the control unit entails the necessity to perform a series of operations such as excavations, laying of ducting, wiring etc., with an evident increase in the installation costs.

**[0004]** Devices are known aimed at protecting a control unit associated with a transceiver device capable of managing some or all of the automation accessories via radio: photocells, guard rails, flashing lights, remote controls, key selectors etc..

**[0005]** Such transceiver device effectively can be interfaced with the control unit to which it can be functionally connected by way of connection by way of plug couplings or terminal boards.

**[0006]** The system described above makes it possible to completely eliminate the electrical cables between the control unit for managing the motor and all the accessories for control, protection and indication.

**[0007]** Although extremely practical, in some situations such solution poses a certain complexity of installation since the electrical card for driving the actuation control unit has to be correctly connected to the electrical card for driving the receiver.

**[0008]** The aim of the present invention is to solve the problems and overcome the drawbacks mentioned above, by providing a control device for automatic closure systems which is extremely simple and practical to install.

**[0009]** Within this aim, an object of the invention is to devise a control device for an automatic closure system which is extremely reliable in operation.

**[0010]** Another object of the present invention is to provide a control device for an automatic closure system which has a low production cost so as to make its use advantageous from an economic viewpoint as well.

**[0011]** This aim and these and other objects which will become better apparent hereinafter are achieved by a control device for an automatic closure system according to appended claim 1.

**[0012]** Further characteristics and advantages of the invention will become better apparent from the description of some preferred, but not exclusive, embodiments of a control device for an automatic closure system, which are illustrated by way of non-limiting example in the accompanying drawings wherein:

Figure 1 is a side view of a control device that can be associated with a sliding door;

Figure 2 is a front elevation view of an electronic board associated with a control device.

**[0013]** In the embodiments illustrated, individual characteristics shown in relation to specific examples may in reality be interchanged with other, different characteristics, existing in other embodiments.

**[0014]** With reference to the figures, the present invention comprises a control device for automatic closure systems.

**[0015]** Such automatic closure systems can comprise leaf gates, sliding gates, sectional or tip-up doors, barriers etc..

**[0016]** The control device comprises a control unit for at least one device for actuating the closure system and a transceiver device connected functionally by way of remote control means to at least one accessory for command and/or for protection/safety and/or for indication of the automatic closure system.

**[0017]** Advantageously, the actuation device comprises a motor, for example electric 30, while the remote control means can be constituted by means for emitting and receiving radiofrequency signals.

**[0018]** According to the present invention, the control unit comprises an electronic control board 10 which defines at least one first command and control portion 11 of the actuation device and at least one second command and control portion 12 of the transceiver device.

**[0019]** In particular, the first command and control portion 11 and the second command and control portion 12 are connected electrically by way of connection tracks defined on the electronic control board 10.

**[0020]** Advantageously, the command, protection/safety and indicator accessory or accessories comprise at least one of the accessories selected from the group comprising:

- indicator accessories (for example a flashing light);
- protection/safety accessories (for example a photocell, a guard rail etc.);
- control accessories (remote control, selector etc.).

**[0021]** With reference to the practical embodiment shown in Figure 1, the control unit is supported by a main body 20 for supporting the actuation device 30.

**[0022]** Obviously, there is no reason why the control unit cannot be remote with respect to the actuation device.

**[0023]** Conveniently, the first command and control portion or portions 11 and the second command and control portion or portions 12 lie on the same plane of arrangement and are connected electrically by way of connections and/or tracks that are supported directly by the electronic board 10.

**[0024]** Conveniently, the transceiver device is associated with receiver and transmitter means for controlling the functionalities of the accessory or accessories for command and/or safety/protection and/or indication.

[0025] In particular, the communication between the second command and control portion 12 of the transceiver device and the accessory or accessories for command and/or for protection/safety and/or for indication of the automatic closure system is bidirectional.

[0026] The communication is bidirectional in order to:

- verify that the accessory or accessories are operating correctly before activating the movement, both opening and closing, of the closure system (of the gate, for example);
- "waking up" the accessories that were paused (in order to maintain the charge in the batteries) before the control unit commands the movement;
- pausing the accessories once the closure system has completed its movement (in order to maintain the charge in the batteries);
- tell the user when the batteries are almost drained and drained in order to proceed with the substitution thereof.

[0027] Operation of a control device for automatic closure systems is evident from the foregoing description.

[0028] In practice it has been found that in all the embodiments the invention has achieved the intended aim and objects.

[0029] In particular, by way of the use of a single electronic control board, connections by way of terminals and wiring are avoided.

[0030] In practice the materials employed may be any, according to requirements.

[0031] Moreover, all the details may be substituted by other, technically equivalent elements.

[0032] The disclosures in Italian utility model application no. 202015000035316 (UB2015U054750) from which this application claims priority are incorporated herein by reference.

[0033] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

a second command and control portion (12) of said transceiver device, said first command and control portion (11) and said second command and control portion (12) being electrically connected at least partially by way of connection tracks defined on said electronic control board (10).

2. The control device according to claim 1, **characterized in that** said at least one accessory is selected from the group comprising:

- indicator accessories (for example a flashing light);
- protection/safety accessories (for example a photocell, a guard rail etc.);
- control accessories (remote control, selector etc.).

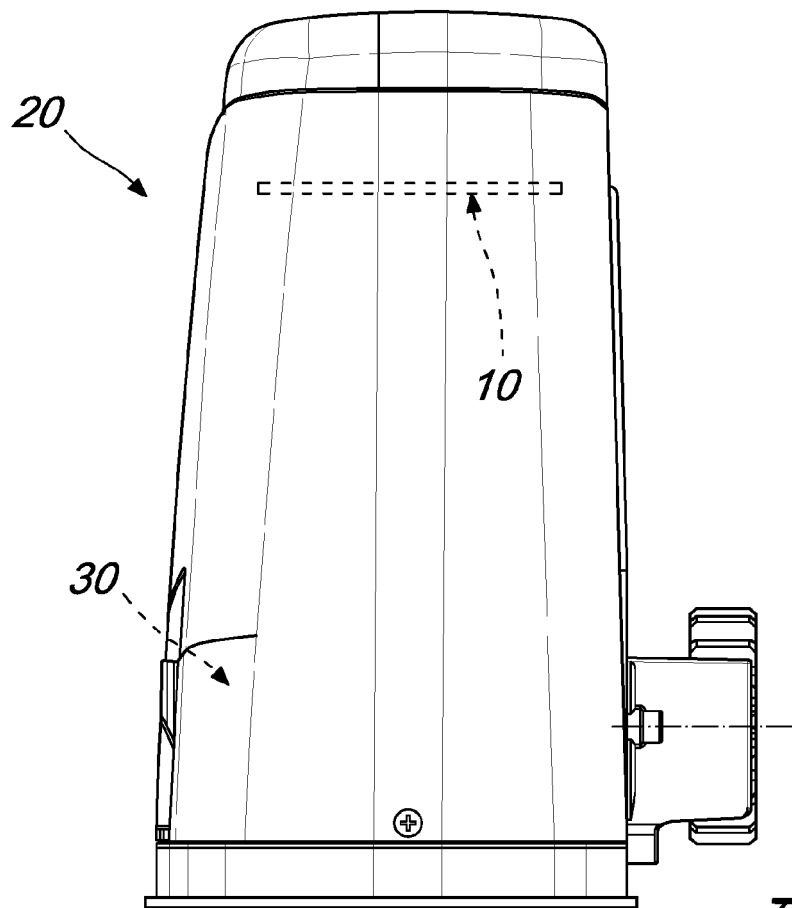
3. The control device according to one or more of the preceding claims, **characterized in that** said control unit is supported by a main body for supporting said actuation device.

4. The control device according to one or more of the preceding claims, **characterized in that** said first command and control portion (11) and said second command and control portion (12) lie on the same plane of arrangement.

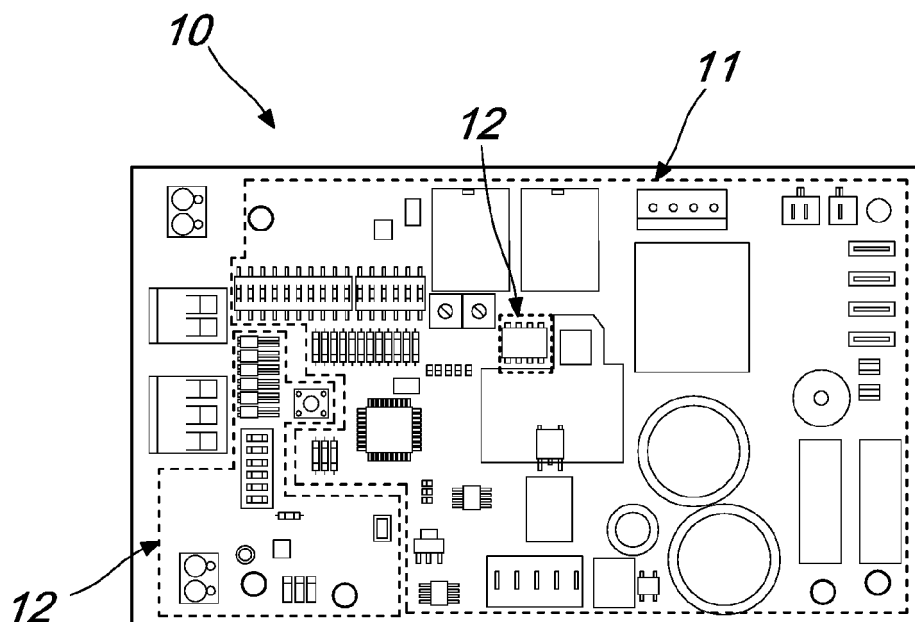
5. The control device according to one or more of the preceding claims, **characterized in that** said transceiver device is associated with transmitter and receiver means for controlling the functionality of said at least one accessory for command and/or for safety/protection and/or for indication.

## Claims

1. A control device for automatic closure systems which comprises a control unit for at least one device for actuating said closure system and a transceiver device that is functionally connected by way of remote control means to at least one accessory for command and/or for safety/protection and/or for indication of said automatic closure system, **characterized in that** said control unit comprises an electronic control board (10) which defines a first command and control portion (11) of said actuation device and



*Fig. 1*



*Fig. 2*



## EUROPEAN SEARCH REPORT

Application Number  
EP 16 17 9606

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	AU 2009 200 327 A1 (SMART OPENERS PTY LTD) 12 August 2010 (2010-08-12) * page 2, line 4 - line 10 * * page 4, line 17 - page 11, line 3 * * page 11, line 32 - page 13, line 35 * * figures 1-4 *	1,2,4,5	INV. G07C9/00 E05F15/00
X	US 6 933 843 B1 (HOM WAYNE C [US] ET AL) 23 August 2005 (2005-08-23) * column 3, line 50 - column 4, line 17 * * column 5, line 6 - line 24 * * figures 1,2,8 *	1,2,4,5	
X	US 6 184 641 B1 (CRIMMINS TERENCE E [US] ET AL) 6 February 2001 (2001-02-06) * column 5, line 27 - column 7, line 4 * * figures 2-6 * * column 4, line 37 - line 55 * * column 10, line 19 - column 11, line 38 *	1-4	
			TECHNICAL FIELDS SEARCHED (IPC)
			G07C E05F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 28 November 2016	Examiner Miltgen, Eric
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 16 17 9606

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

28-11-2016

10

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
AU 2009200327 A1	12-08-2010	NONE	
US 6933843 B1	23-08-2005	NONE	
US 6184641 B1	06-02-2001	AU 760151 B2	08-05-2003
		AU 2388299 A	28-10-1999
		CA 2269001 A1	21-10-1999
		DE 19917831 A1	18-11-1999
		FR 2778036 A1	29-10-1999
		GB 2338360 A	15-12-1999
		NZ 335205 A	29-09-2000
		US 6184641 B1	06-02-2001

15

20

25

30

35

40

45

50

55

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82